REMARKS

Claims 1, 5-13, 16-18, and 38-50 will remain in the application after entry of the above amendments. Claims 26-37 remain withdrawn. Claims 1, 13, 38, and 47 have been amended. The Examiner has rejected Claims 1 and 38 under 35 U.S.C. § 102(e) as anticipated by McNeely et al. U.S. 6,296,020, ("McNeely"). The Applicants disagree for reasons to be discussed in detail below.

In general, they agree that McNeely discloses a fluid circuit that uses "passive fluid dynamics" to control flow of liquids and that centrifugal force is not employed. However, McNeely does not show transfer of a liquid sample by capillary action, but instead uses a second liquid to force a first liquid past hydrophilic or hydrophobic stops. While McNeely clearly is aware of the principles associated with the flow of liquids in capillary passageways, he does not describe a device in which liquid flows by capillary action from a sample well into a segment that defines a sample volume, which then is transferred to a first reagent well. In the Applicant's invention a predetermined volume of a sample liquid to be analyzed is separated from a larger part of the same liquid between air vents. By contrast, McNeely generally teaches mixing of two liquids, or dividing a liquid into multiple wells, or recombining liquid from multiple wells into a single chamber. He does suggest using air vents, but not to define the volume of a sample liquid, but instead to remove air bubbles in order to facilitate joining of two liquid passageways. Furthermore, McNeely teaches the use of two different liquids which are in direct contact with each other and not separated by air vents.

Comparing the Examiner's position with the device of Claims 1 and 38:

Examiner	Claims 1 and 38
o The McNeely device has a plurality of sample wells.	o McNeely has wells that contain liquids, but they are not sample wells that provide liquid to a capillary segment which defines the volume of a uniform liquid sample for analysis.
o The McNeely device has a hydrophilic capillary in fluid communication with the sample well for receiving a sample by capillary action.	o It is clear that McNeely displaces a first liquid with a second liquid. See for example column 7, lines 8 to 31. McNeely refers to "inserting" liquids, which implies applying an external force rather than relying on capillary forces. While capillary forces could be present it is evident that McNeely

Examiner	Claims 1 and 38
	does not rely on them to move liquids. He does teach the use of capillary forces in stopping flow of liquids.
o McNeely device has a segment defining the volume of a uniform sample between two vents.	o No segment defining a uniform sample volume can be identified in the McNeely examples or in the passages cited by the Examiner (note "figs. E-G" unclear). The air vents in McNeely do not define a fixed volume of sample liquid.
o The McNeely device has a hydrophilic stop within a hydrophilic capillary to prevent transfer of a sample until overcome by a force other than centrifugal force.	o While it is not clear that McNeely used hydrophilic capillaries, it is possible. McNeely's stops may be either hydrophilic or hydrophilic in nature. However, McNeely does not show a segment defining a sample volume that is transferred to a reagent well through a hydrophilic stop.

Claims 5-13, 16-18, 39-50 have been rejected under 35 U.S.C. 103(a) as unpatentable (i.e. obvious) over McNeely in view of Kellogg et al., U.S. 6,063,589, ("Kellogg"). The Examiner cites Kellogg for reagent wells to react with a liquid sample, and for reducing interference of another component. Kellogg was also cited for pretreat of a sample and the use of electrodes to measure properties.

All these claims depend from independent Claims 1 and 38. Consequently, if the rejection of Claims 1 and 38 is withdrawn, the remaining claims should be allowable. However, it should not be obvious to modify McNeely as the Examiner argues, since Kellogg employs centrifugal force to move liquids and could not be combined with McNeely, who moves one liquid by inserting a second liquid behind it. In fact, rather than Kellogg, the Examiner appears to rely on "it is well known in the art that microfluidic devices are used for mixing samples with reagents and detecting a reaction product".

The Applicants ask that the Examiner reconsider his rejections in view of the above amendments and remarks. If further amendment is considered necessary to obtain allowance, he is invited to contact the Applicant's attorney at the telephone number provided below.

Respectfully submitted,

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